

Corps schedules Chief Joseph Dam spill to test flow deflectors for gas abatement program

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SEATTLE – The U.S. Army Corps of Engineers, together in collaboration with other federal agencies and others in the Mid-Columbia Region, will conduct spill tests at Chief Joseph Dam near Bridgeport, Wash., April 28 – May 1. The purpose of the test is to evaluate the effectiveness of recently installed flow deflectors at reducing total dissolved gas concentrations downstream of the dam.

For four days next week the Corps will perform a series of 12 tests, three hours each, during daylight hours. Spill amounts will be as low as 18,000 cubic feet per second (cfs) to as high as 145,000 cfs, spread across all 19 spill bays. The maximum river flow during the tests is not expected exceed 235,000 - 240,000 cfs, approximately the same level seen during the spring melt in 2008.

Besides the lower river, the reservoir above Chief Joseph Dam, Rufus Woods Lake, may be operated below the normal operating pool of 950 feet to facilitate spills at the dam. The lowest elevation the pool may reach would be 947 feet, during those four days Apr. 28 - May 1, 6 a.m. to midnight.

Safety is always a primary concern of the Corps. Those people living, playing and working on or near the river are urged to be aware and be cautious for changing river conditions. Safety is important during the spill test and at all times when near the river.

Spill is not a common event at Chief Joseph Dam. In the event more water is passed on to Chief Joseph Dam than can be used for power generation, the spillway gates are opened to pass the excess water. The flow rate in the Columbia River seldom exceeds the power plant capacity at Chief Joseph Dam.

The Corps did a spill test in April 2007 and 2008 and also spilled intermittently from late May through early July 2008 during the spring melt when in-river flows reached a high of approximately 235,000 cubic feet per second (cfs).

The Corps' largest hydropower producing dam, and the nation's second largest, Chief Joseph Dam is a run of the river project that maintains a relatively constant level in Lake Rufus Woods throughout the year. High spring flows can trigger a need to use the spillway at Chief Joseph and the falling water can entrap gas, creating conditions that are not good for resident and Endangered Species Act listed fish. With spillway deflectors, the flow stays on the surface and allows the gas to dissipate quickly.

The construction of the deflectors began in 2005 as a result of a NOAA-Fisheries Federal Columbia River Power System Biological Opinion, with a commitment from the Corps to complete the flow

deflectors at Chief Joseph Dam by 2009. The flow deflector construction project was completed in the fall of 2008.

Chief Joseph Dam does not have spill for fish passage, but water is spilled at this project and Grand Coulee in order to pass high flows. Investigations by the Corps concluded that installation of flow deflectors at Chief Joseph Dam, which is immediately downstream of Grand Coulee, and shifting spill and power generation between the projects is the most cost-effective alternative for gas abatement at these two dams.

The concrete deflectors are installed near the bottom of the sloped spillway surface along the entire 922 feet length. The tops of the deflectors are submerged approximately 10 feet underwater, are not visible and consist of a curved transition from the spillway face that then extends horizontally 12.5 feet to direct flow in a skimming fashion across the water surface below the dam.

The Corps and the U.S. Bureau of Reclamation operate the Federal Columbia River Power System dams which provide the benefits of hydropower, flood risk management, navigation, irrigation, water supply, fish and wildlife benefits and recreation to the Pacific Northwest. Bonneville Power Administration markets the power from the dams and invests in capital improvements, maintenance, and fish and wildlife mitigation programs for the dams. NOAA Fisheries Service produces a biological opinion assessing if the agencies' actions in operating the system will jeopardize endangered and threatened species.